

may be seen by the direction of bold arrows 23, which must be supplied by energy storage 21 connected to the power electronic control 19.

### IN THE CLAIMS

Please delete claim 256 without prejudice, and amend claims 223, 226-232, 236, 237, 241, 243-245, 252, 273, 279, 280, 290, and 291 to read as follows:

223. A prime mover output control system, comprising

- a) a prime mover, comprising a mechanical output comprising a rotational velocity and a torque; and
- b) a generator, powered by said prime mover, and providing an adjustable torque load on said prime mover;

wherein said prime mover comprises a characteristic of acceleration and deceleration according to said torque load on said prime mover, towards a synchronous speed with said generator; and

- c) a control mechanism electrically connected to said generator, comprising an input for signaling a system power output requirement, said control mechanism providing control over said adjustable torque load of said generator, to effect a product of prime mover rotational velocity and torque to substantially meet said system power output requirement.

226) The system of claim 224 wherein said control over said adjustable torque load comprising adjustment of said torque load in response to a changed system power output requirement, in a single step.

227) The system of claim 226 wherein said generator supplying power to an electrical load, and further comprising an energy storage unit connected to said control mechanism, said energy storage unit for supplying said electrical load with said system power output requirement, substantially irrespective of prime mover output fluctuations caused by prime mover power output change.

- 228) The system of claim 226 wherein said generator supplying electricity to an electrical load, and further not comprising substantial electricity storage between said generator and said electrical load.
- 229) The system of claim 224 wherein said control over said adjustable torque load comprising adjustment of said torque load in response to a changed system power output requirement in a plurality of stages.
- 230) The system of claim 224 wherein said control over said adjustable torque load comprising adjustment of said torque load in response to a changed system power requirement, to a torque load beyond a torque load required to achieve said changed system power output requirement, and a restoration to said torque load required to achieve said changed system power output requirement, when said changed system power requirement is reached by said prime mover.
- 231) The system of claim 224 wherein said control mechanism comprising gearing between said prime mover and said generator.
- 232) The system of claim 224, further comprising an energy storage unit connected to said control mechanism.
- 236) The system of claim 234 wherein said generator comprising an alternating current synchronous machine and wherein said power electronic load comprising a control element for adjustment of said controllable current draw, based on a desired relationship between a sampled generator output current and a sampled generator output voltage.
- 237) The system of claim 234 wherein said generator comprising an alternating current synchronous machine and wherein said power electronic load comprising a control element for adjustment of a frequency component of said power, providing said controllable current draw.
- 241) The system of claim 234 wherein said power electronic load comprising an operating range comprising positive incremental resistance over part or all of said operating range.

- 243) The system of claim 242 wherein said threshold voltage adjuster further connected to said input for signaling a system power output requirement, and further comprising graphical or mathematical techniques for determining said threshold voltage in accordance with said system power output requirement.
- 244) The system of claim 243 wherein said threshold voltage adjuster comprising means to increase said threshold voltage in response to an input signal describing a power output requirement increase, and means to decrease said threshold voltage in response to an input signal describing a power output requirement decrease.
- 245) The system of claim 236 wherein said power electronic load comprises a boost converter.
- 252) The system of claim 224 wherein said generator comprising adjustable excitation, and wherein said generator being configured to have a torque load directly related to its excitation, and wherein said control mechanism comprising control over said adjustable excitation to control said torque load.
- 273) The system of claim 223 wherein said generator having an excitation current of adjustable frequency, and wherein said control mechanism comprising a generator excitation control for controlling said excitation current of said generator to effect control over said torque load on said prime mover; and wherein said system further comprising:
- a) energy storage, connected to the output of said generator, and
  - b) an electrical load connected to said energy storage.
- 279) The system of claim 273 wherein said generator excitation control further comprising
- a) an input for receiving a signal to start said system,
  - b) means to increase inverter frequency in response to said signal, and
  - c) a power electronic load connected between said generator and said energy storage, for causing said energy storage to supply operating power to said generator; whereby said prime mover may be started.
- 280) The system of claim 223 wherein said generator for generating alternating current and comprising electrical terminals, and wherein said control mechanism comprising a power electronic load, connected to said electrical terminals of said generator, said power

electronic load comprising rectifier components, for converting alternating current to direct current, and wherein said power electronic load comprising control over the frequency of said alternating current, to effect control over said torque load of said generator on said prime mover; said system further comprising energy storage, connected to said power electronic load, and an electrical load, connected to said energy storage.

290) The system of claim 223 further comprising energy storage and wherein said mechanical load comprising a generator, for supplying electrical power to an electrical load, and wherein said control mechanism comprising an electrical input from said generator and being configured to control the resistance of said input to effect control over said torque load; and wherein said control mechanism comprising an electrical output to said energy storage.

291) The system of claim 290 further comprising a controller, electrically connected between said energy storage unit, and said electrical load having control over the conversion of electrical power from said energy storage to said electrical load to substantially the electrical requirements of said electrical load.

Please add new claim 294 as follows:

294) (new) The system of claim 234 wherein said generator comprising a direct current generator and wherein said power electronic load comprising

- a) voltage and current sampling means for sampling the input voltage and input current from said generator; and
- b) an adjustable threshold voltage; and
- c) means for comparing a scaled voltage proportional to said input current, with the amount of said input voltage above said threshold voltage; and,
- d) a switching control element for controlling the current draw from said generator; and
- e) means for adjusting said switching control element according to any differences between said scaled voltage and said voltage above threshold.